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Research Article

IMPACT OF GLOBAL MEDICAL SERVICE TRIPS ON PHYSICIAN CAREERS

**Leslie C. Ravago^{1*}, Charles Haddad¹, Judella Haddad-Lacle¹, Virginia Kockler²,
Elizabeth Devos³ and Lori Bilello⁴**

¹University of Florida College of Medicine – Jacksonville, Department of Community Health and Family Medicine

²University of Florida College of Medicine, Department of Pediatrics,

³University of Florida College of Medicine – Jacksonville, Department of Emergency Medicine,

⁴University of Florida College of Medicine – Jacksonville, Department of Medicine

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ABSTRACT

For nearly 20 years, University of Florida College of Medicine students have participated in week long global health service trips. This study aims to determine the effects of global service trips on medical student's learning and their future career choices. An electronic survey was sent via email to 203 medical service trip participants, of which 75 surveys were completed for a total response rate of 37%. A descriptive analysis that includes counts and percentages for each of the survey questions was performed including cross tabulations. Chi square analysis was performed to compare two groups, current students versus alumni. Based on our study, global service trips positively impact trip participant's medical skills. It showed improved history taking, physical examination, diagnostic and procedural skills, and medical decision making ability. It increased their cultural competency and empathy for the poor and underserved. It also reinforced their leadership skills but created stressor for the students participating in the trips. As far as impact on the choice of a medical specialty, our study showed mixed results.

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INTRODUCTION

Global health trips for American medical students traveling to foreign countries are being offered more frequently and by more medical schools. Since 2000, 23.1% of all medical students in the United States have participated in international training annually [Haupt, Pearson & Hall, 2007]. The average percent of University of Florida (UF) medical students joining UF sponsored global health trips is 27.5%.

Medical students who have completed an international clinical rotation often report a greater ability to recognize disease presentations, do a more comprehensive physical examination, improved diagnostic skills with less reliance on expensive imaging, and greater cultural sensitivity [Drain et al, 2007]. Global health trips vary in length, level of education of participants, and services provided such as urgent care services, primary care services, dental services, and surgical services.

These trips provide students several potential benefits outside

their standard medical education, including an opportunity to actively participate in the care for many patients in a supervised setting, to improve clinical skills, to better understand international cultures and health care needs, and to recognize the relevance of socioeconomic situation to health care delivery. There may be some impact on career choices by these students as well. Findings suggest that having international health education experiences contributed to a more well rounded training for medical students. Students reported being more culturally competent and were more likely to choose a primary care specialty and/or a public service career [Jeffrey et al, 2011]. This study attempted to quantify the impact of global health trips on UF students who participated during medical school traveling to rural socioeconomically challenged areas of Ecuador, Dominican Republic, Mexican Yucatan Peninsula, Haiti, Nicaragua, and Thailand.

METHODS

An expert panel of academic physicians who have participated in numerous global service trips with medical students created

*Corresponding author: **Leslie C. Ravago**

University of Florida College of Medicine – Jacksonville, Department of Community Health and Family Medicine

a survey that addressed how these experiences influenced their medical career choices, improved their skills, and increased their compassion in serving the poor and underserved. The survey was developed in an electronic format and tested on a select group of physicians who recently participated in service trips to refine the questions and flow of the survey.

Test responses were cleared before the email request to complete the survey was sent to previous global service trip participants. Approval to conduct this study was obtained through the University of Florida Institutional Review Board (IRB-03).

The UF College of Medicine, Office of International Education Programs provided email addresses for 203 medical students who participated in global service trips from 2012 to 2015.

An introduction and survey link was sent via email using Qualtrics survey software through UF's secure server to previous global health trip participants (medical students and alumni who are recent graduates) inviting them to participate in the survey. Each participant was assured that results would be strictly confidential and totally voluntary. Surveys are anonymous and completion implied consent to participate in the study. The email request was sent three times to the 203 medical service trip participants during a 4-month period in 2015. We received 75 completed surveys; 17 email addresses were undeliverable for a total response rate of 37%.

A descriptive analysis that included counts and percentages for each of the survey questions was performed including cross tabulations. Chi square analysis was performed to compare two groups, current students versus alumni.

RESULTS

Of the 75 responses included in the analysis, 80% were medical students and 20% were alumni. Third and fourth year medical students (37% and 56%, respectively) were the majority of students who responded to the survey. With regards to the alumni, 33% are in primary care and 67% are specialists (see Table 1). Out of 75 responses, 31% participated in medical service trips 3 or more times. The majority of those who responded (69%) participated in medical service trips only 1-2 times.

Table 1 Sample Characteristics

	Frequency	%
Alumni	15	100
<i>Primary Care</i>	5	33
Pediatrics	3	20
Internal Medicine	2	13
<i>Specialty Care</i>	10	67
OB/GYN	5	33
Surgery	3	20
Radiation Oncology	1	7
Anesthesiology	1	7
Students	60	100
1 st Year	0	0
2 nd Year	4	7
3 rd Year	22	37
4 th Year	34	56
Number of Medical Service Trips	75	100
1	29	38
2	23	31
3	11	15
More than 3	12	16

When asked how these global medical service trips influenced their medical career choices, improved their skills, and increased their empathy in caring for the underserved, the students and alumni reported similar experiences (see Table 2). Both students and alumni strongly agreed that the trips improved their ability to take a history. Further, 61% of students and alumni agreed or strongly agreed that the trips did improve their confidence in procedural skills, while 22% were neutral and 18% disagreed or strongly disagreed with this statement. The majority of alumni and students agreed or strongly agreed (76%) that the trips improve their diagnostic skills and 77% agreed or strongly agreed that participating in the trips improve their medical decision-making ability. Over half of the students and alumni agreed or strongly agreed that participating in the trips made them feel more confident and knowledgeable when they started clinical rotations as compared to their peers, while a minority were neutral (18%) or disagreed/strongly disagreed with this statement (7%).

A vast majority of the medical student and alumni respondents strongly agree or agree (96%) that the trips improved their empathy for the poor or underserved and 94% of respondents agreed or strongly agreed that the trips improved their ability to serve individuals from other cultures.

Over 87% of students and alumni agreed or strongly agreed that participating in the medical service trips during medical school increased their desire to go on overseas medical trips in the future. Only 8% disagreed or strongly disagreed with that statement. Students and alumni alike agreed or strongly agreed (97%) that participating in the trips increased their appreciation of medical resources available in the United States and 69% of students and alumni agreed or strongly agreed that the trips made them more comfortable speaking a foreign language in their own practice.

Students and alumni also agreed or strongly agreed (92%) that the trips improved their leadership skills. Interestingly, students and alumni either strongly agreed (22%) or agreed (43%) that the trips created stress for them. Only 9% of respondents were neutral regarding this statement and 25% disagreed or strongly disagreed with this statement.

Students and alumni were varied in their responses to the question "Did the medical mission trip affect your choice of specialty?" with 30% of students agreeing or strongly agreeing that the trips did affect their ultimate choice of specialty, while 44% were neutral and 26% disagreed or strongly disagreed with this statement. In contrast, 54% of alumni agreed or strongly agreed that the trips did affect their ultimate choice of specialty, while 20% were neutral and 13% disagreed with this statement. Of the 75 respondents to the question "Did participating in a global medical service trip reinforce the reason why you wanted to be a physician?" 53% of medical student and alumni respondents strongly agreed with this statement and another 36% agreed with this statement. Only 9% of respondents were neutral and 1 respondent strongly disagreed.

Only one question had a significant difference in the response between the students and alumni where 18% of the students strongly agreed that the trip resulted in improved decision making while the alumni reported 53% (p value = 0.09).

Table 2 Survey Results

Did participating in a global medical service trip:		Student	Alumni	Total
Improve your ability to perform physical examination?	Strongly	17	9	26
	Agree	36	5	41
	Agree	5	1	6
	Neutral	1	0	1
	Disagree	1	0	1
Improve your empathy to care for patients who are poor or the underserved?	Strongly	32	10	42
	Agree	26	4	30
	Agree	1	1	2
	Neutral	1	0	1
	Disagree	0	0	0
Improve your ability to take medical history?	Strongly	16	8	24
	Agree	30	6	36
	Agree	9	0	9
	Neutral	4	1	5
	Disagree	1	0	1
Improve your ability to serve patients from other cultures?	Strongly	39	10	49
	Agree	19	3	22
	Agree	2	2	4
	Neutral	0	0	0
	Disagree	0	0	0
Improve your leadership skills?	Strongly	36	10	46
	Agree	19	4	23
	Agree	4	1	5
	Neutral	1	0	1
	Disagree	0	0	0
Affect your choice of medical specialty?	Strongly	9	4	13
	Agree	9	4	13
	Agree	26	4	30
	Neutral	14	3	17
	Disagree	1	0	1

DISCUSSION

Our findings revealed that short one-week global health service experiences substantially impact students and teach important skills. The majority of trip participants were energized by the experience and felt the trips stimulate their motivation to participate in future medical work abroad. Further, a strong majority reported increased empathy for the poor, the medically underserved, and with those needing to navigate the medical system in a foreign language. As a result of their experiences, the participants’ confidence in interacting with patients of different cultures and languages increased. Moreover, the participants’ responses indicated that they learned a significant amount about how to communicate with patients cross-culturally and how to address the needs of patients through interpersonal interaction. This is consistent with Abedini’s finding that medical students’ participation in short term global health service trips “may stimulate the development of critical reflection on current and future professional roles [Abedini et al, 2012].” Our results were comparable to prior studies of Vora et al, which also demonstrated that students participating in student-initiated, student facilitated international service learning experiences felt that the experience "made me culturally sensitive [Vora et

al, 2010]." A similar study by Nishigori also found that more than 90% of the students interviewed met objectives related to improved cultural competency [Nishigori et al, 2009].

Overwhelmingly, the survey participants reported improvement in their leadership skills as a result of participating in global health trips. Interestingly, a majority of the participants also reported that participating in the trip created stress for them. In addition to experiences in a foreign land, these findings may be related to the structure of these student-led trips where they are required to organize and raise funds for the trip. To our knowledge, this is a topic that has not yet been studied; the experience of the participants could be improved with further research on this topic.

While only 36% of our respondents agreed or strongly agreed overall and 54% of alumni agreed or strongly agreed that participation in a trip affected their choice of medical specialty, 89% reported reinforcement of their choice of a career in medicine. Bruno and colleagues found students participating in electives in underserved, international communities to match into primary care specialties at rates higher than their classmates as well as the general population participating in the National Residency Matching Program during the studied years [Bruno, Imperato&Szarek, 2014]. Our study attempts to consider longitudinal responses from trip participants over many years. However, our trips are student-led and complete rosters for UF global service trips were only available for the 4 most recent years (2012-2015) with the most senior alumni included graduating in 2012. Limitations in reaching alumni who no longer regularly monitor university email, our only method for contact, also further limit responses. As such, most respondents are current medical students or recent graduates early in residency training. Many respondents have not yet confirmed their specialty choice in the match and few, if any, are practicing independently where both opportunity and barriers to choosing to participate in further international experiences will regularly exist. Unfortunately, we do not have sufficient data to make firm statements about our trips’ effects on our students’ specialty choices. To better discuss these trips’ impact on specialty choices, future participation in medical service trips, and careers in global health, a continued emphasis on retaining records to monitor these outcomes longitudinally will be required. More interval follow-ups of international health education participants after medical school and consideration of other outcome measures that extend beyond self-reported indices such as participant satisfaction or career choice are necessary [3]. A statistically significant difference between the students and alumni for the question that asked if the trip “improve your medical decision making ability” is believed to be due to the medical student’s general inability to make medical decisions during their early training. Students don’t have the responsibility to make medical decisions for their patients while they are in medical school and generally do not have a chance to use this skill until they are in their residency program. We believe that the opportunity for students to participate in patient care during these trips gives context to their medical knowledge acquisition and later, as alumni, are able to apply decision-making skills in residency based on these experiences. This study provides strong evidence that participants felt that these global health trips improved history taking, physical examination skills, and

empathy for the poor and underserved, and leadership skills. Further results indicated that participants believed that the trips improved their procedural skills, diagnostic abilities, and appreciation of the resources in the United States. Most students felt that the trip reinforced the reason why they wanted to be a physician as well as increased their confidence starting their clinical rotations. There were mixed results as to whether these trips had any impact on medical specialty choice, although more than half of the alumni agreed that it had. Longitudinal studies will be needed to fully describe career trajectories influenced by students' global health service learning experiences.

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